IN THE CLAIMS

This listing of claims replaces all prior versions, and listings, in this application.

1. (original) A method for determining whether a gene product has an activity of interest comprising:

(a) co-transfecting a cell with

(i) a first vector comprising a gene coding for a test protein and

(ii) a second vector comprising a gene coding for a reporter protein;

(b) expressing said test protein and said reporter protein in a transfected cell;

(c) measuring abundance and/or activity of said reporter protein, wherein said abundance and/or activity of said reporter protein is modulated by the presence of a protein having said activity of interest; and

(d) determining whether said test protein has said activity of interest.

2. (original) The method of claim 1, wherein said first vector and/or said second vector further comprise promoter sequences.

3. (original) The method of claim 1, wherein co-transfecting comprises contacting said cell with said first vector, said second vector, and a transfection reagent.

4. (original) The method of claim 3, wherein said transfection reagent is at least one proprietary lipid composition selected from the group consisting of DMIRE-C, cellFECTIN®, lipofectin®, oligofectAMINE™, lipofectAMINE™, lipofectAMINE PLUS™, lipofectAMINE 2000™, fugene, Effectene, TransFast™, Tfx™, Transfectam®, siPORT™ amine, siPORT™ lipid, and GeneJuice.

5. (original) The method of claim 4, wherein said transfection reagent is fugene.

6. (previously presented) The method of claim 3, wherein co-transfecting comprises:

(i) coating a well of a multi-well plate with a polycation polymer;

(ii) contacting said cell with said first vector, said second vector, and said transfection reagent in said well; and

(iii) incorporating said first and said second vectors in said cell to produce said transfected cell.

7. (previously presented) The method of claim 1, wherein abundance of said reporter protein is measured.

8. (original) The method of claim 7, wherein said reporter protein is measured by luminescence.

9. (original) The method of claim 7, wherein said reporter protein is measured by a binding assay for said reporter protein.

10. (original) The method of claim 7, wherein said reporter protein is measured by electrophoretic analysis.

11. (previously presented) The method of claim 1, wherein said activity of said reporter protein is an enzymatic activity that catalyzes the reaction of a substrate to form a product, and said enzymatic activity is measured by adding said substrate and measuring consumption of said substrate and/or formation of said product.

12. (original) The method of claim 11, wherein said enzyme activity is selected from the group consisting of β-galactosidase activity, β-lactamase activity, and luciferase activity.

13. (previously presented) The method of claim 1, wherein said reporter protein affects or regulates a biological process in said cell and wherein said reporter protein is measured by observing an indicator of said biological process.

14. (original) The method of claim 13, wherein said indicator is selected from the group consisting of change is cell morphology, change in abundance of a native protein,

change in post-translational modification of a native protein, change in transcription of a native gene, and change in secretion of a native protein.

15. (previously presented) The method of claim 1, wherein said activity of said reporter protein is aggregation and said reporter protein is Sup35.

16. (previously presented) The method of claim 1, wherein said activity of interest is pro-apoptotic or anti-apoptotic activity.

17. (previously presented) The method of claim 1 further comprising: confirming that expression of said test protein results in a change in an indicator of apoptosis by another assay.

18. (original) The method of claim 17, wherein said indicator of apoptosis is selected from the group consisting of DNA fragmentation, caspase activation, annexin staining on the outer membrane, DNA ladder formation, and production of cleavage products of caspase such as DFF45, alpha fodrin, or lamin A.

19. (previously presented) The method of claim 1 further comprising: repeating said method with another cell having a different genetic background.

20. (previously presented) The method of claim 1, wherein said first vector is selected from a library of vectors, at least two members of said library comprising genes for different proteins, and said library is screened for one or more members encoding proteins having the activity of interest.

21. (original) The method of claim 20, wherein said library comprises at least 1000 different genes.

22. (previously presented) The method of claim 20, wherein said cell is co-transfected in a multi-well plate.

23. (previously presented) The method of claim 1 further comprising:

(d) repeating said method using a third vector instead of said first vector, said third vector differing from said first vector in that it

i) does not code for a protein;

ii) codes for a protein that is known to not have the activity of interest or

iii) does not have a promoter sequence; and

(e) comparing the activity and/or abundance of the reporter protein measured with said first vector and said third vector to determine whether said test protein has said activity of interest.

24. (previously presented) The method of claim 1 further comprising:

(d) repeating said method without said first vector; and

(e) comparing the activity and/or abundance of the reporter protein measured with and without said first vector to determine whether said test protein has said activity of interest.